

REMARKS/ARGUMENTS

Claim 14 stands rejected by the Examiner under 35 USC 112, first paragraph, as failing to comply with the enablement requirement. The Examiner states that the claim contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which the invention pertains to make and/or use the invention. The Examiner argues that the Claim 14 limitation of "off-set from any other pair of flutes by between about 1 degree to about 10 degrees" has insufficient antecedent basis. It is respectfully submitted that full and proper support for this limitation is found in the specification. Starting at paragraph 37, in conjunction with FIG. 4, it is clearly stated that one set of opposing flutes are directly aligned with one another, while the second set of opposing flutes are "off-set" by a variable angle, usually between about 1 degree to 10 degrees. Plainly, when this "off-set" description is taken in context with FIG. 4 (as is directed in the first sentence of paragraph 37), the "off-set" term means "rotational off-set" about the center axis of the tool. "Off-set" of flutes is a standard term used regularly in the art to which the invention relates and indicates the rotational shift one flute has to another. If the Examiner desires that the standard rotational off-set be noted on FIG. 4, Applicant is willing to amend FIG. 4 to include such a rotational indicia on FIG. 4, however, the existing specification clearly indicates that the "off-set" refers to paired flutes having their center lines rotationally off-set from one another, as is shown in FIG. 4.

Claims 1, 4, and 9 have been rejected under 35 USC 102(b) as being anticipated by Hiyama ('059). The Examiner states that Hiyama teaches a rotary cutting tool (drill) with a shank, cutting part, cutting tip, a plurality of paired flutes formed within a cutting

region, cutting edges formed along an outer border of each flute, and each flute has a first helical-pitch (proximate the cutting tip) gradually transitioning to a second helical-pitch (proximate the terminating distal location). Again, it is respectfully submitted that the Examiner has misread the actual invention that is found in Hiyama. Nowhere in Hiyama is the concept/invention of a variable flute helical-pitch suggested, taught, mentioned, or even indirectly implied. What Hiyama discloses are tools that have cutting edges on multiple helical flutes in which the cutting edges themselves are variably angled on each CONSTANT HELICAL-PITCH flute. In Hiyama the pitch of each flute remains fixed, while the cutting edge angles on each flute varies. **The cutting edges in the subject invention are fixed in angle and the actual helical-pitch of the flutes themselves varies from the tip down to the shank.** A simple analogy may help explain the subject invention. If you hold a “SlinkyTM” (a traditional child’s coiled-spring toy) in one hand and keep the upper coils held tightly together and then with the other hand pull the lower coils away from the fixed/held coils the angle of the helical-pitch varies from the held region to the extended region. The subject invention is somewhat the same, except the subject invention helical-pitch varies in a smooth fashion from steep to less-steep or visa versa. This variable helical-pitch is simply NOT found or suggested in the Hiyama reference.

The Examiner rejects Claims 3, 6-8, and 11-13 under 35 USC 103(a) as being unpatentable over Hiyama, in view of Lindblom ('209). It is important to note that all of these claims depend from independent Claims 1, 4, or 9, which all include the limitation that the claimed tool has variable helical-pitch flutes. Lindblom does not mention, suggest, teach, or imply a variable helical-pitch angle for the flutes. **Again, it is**

respectfully stressed that the Examiner misunderstands the basic nature of the subject invention. The heart of the subject invention deals with the variable pitches for the helical flutes in which each flute varies in helical-pitch along its own length, whereas ALL of the cited references have fixed helical-pitches for the entire length of each of their flutes.

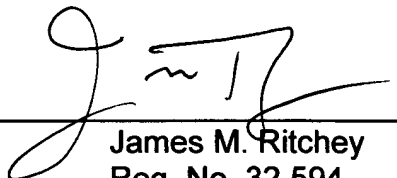
Claims 2, 5, and 10 stand rejected under 35 USC 103(a) as being unpatentable over Hiyama, in view of Maier ('034), and in further view of De Dobbelaere et al. ('382). Once again Claims 2, 5, and 10 all depend from claims that contain the variable helical-pitch limitation that is NOT found, taught, suggested, implied, or hinted at in any of the cited references.

In view of the above remarks and arguments, the Examiner is respectfully requested to withdraw the rejections to the Claims and pass this application to issue. If, in the opinion of the Examiner, a telephone conference would expedite the prosecution of the subject application, the Examiner is invited to call the undersigned attorney at (916) 498-1010.

Respectfully submitted,

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By: _____


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